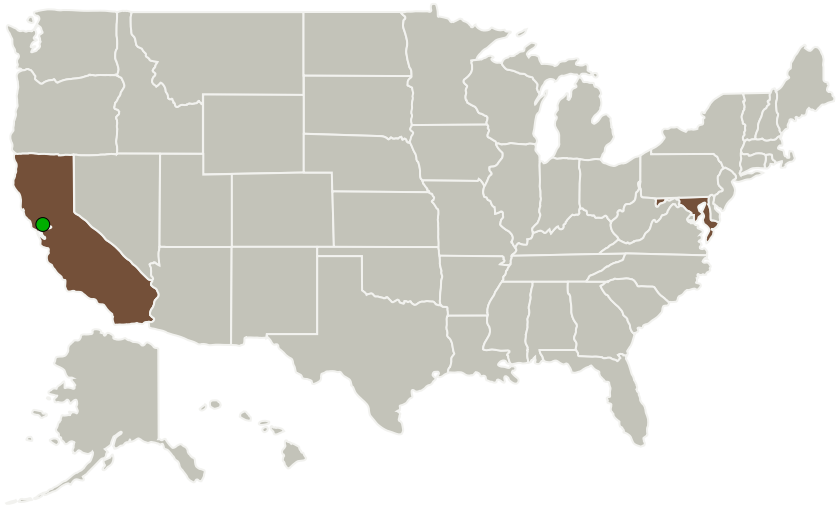
DAAS: Data Analytics for Assurance of Safety, Phase I

Completed Technology Project (2016 - 2016)

Project Introduction

Assuring safe operations in the National Airspace (NAS) encompasses monitoring a variety of systems simultaneously and in real time. It is helpful to imagine NAS as a system of systems where each system loosely interacts with the other. Under this paradigm, an aircraft is a system, so is an airline and as is an airport. Automating safety assurance for each of these systems would involve monitoring an array of sensors each with a different time cycle and reporting characteristics and processing enormous amounts of data. Given the complexing of NAS, it is unlikely that any one tool could provide a solution. Instead, a number of tools each monitoring a smaller, more manageable part of the NAS, all the while sharing information with each other, seem more promising. In the future these tools would ensure airborne separation assurance, track Air Traffic Control (ATC) guidance conformance and ensure safe ground operations. DAAS is an architecture to support these very needs. It forms the basis of a network of smaller, more focused, safety assurance tools that share information and data through a central Big Data repository that is mined using advanced machine learning algorithms.

Primary U.S. Work Locations and Key Partners



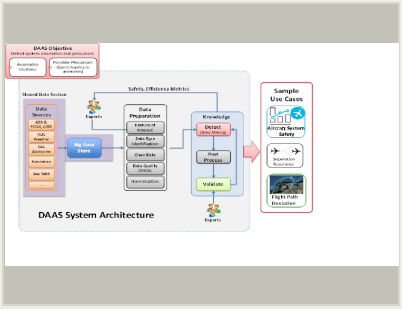


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Table of Contents

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
Intelligent Automation, Inc.	Lead Organization	Industry	Rockville, Maryland
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Maryland

Project Transitions

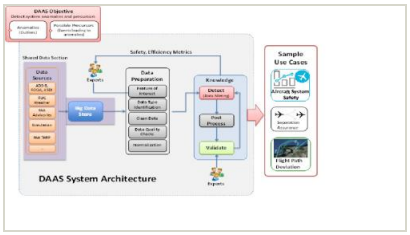
June 2016: Project Start

December 2016: Closed out

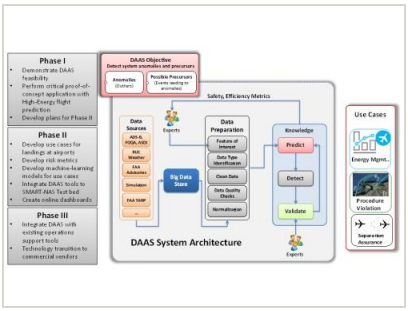
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139972)*

Images



Briefing Chart Image
DAAS: Data Analytics for Assurance of Safety, Phase I
(https://techport.nasa.gov/image/130289)



Final Summary Chart Image
DAAS: Data Analytics for Assurance of Safety, Phase I Project Image
(https://techport.nasa.gov/image/137115)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Intelligent Automation, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

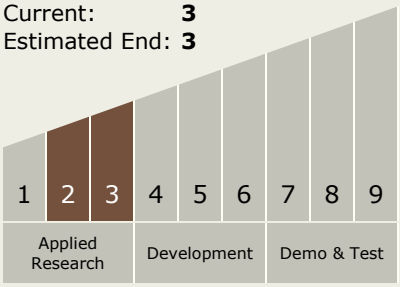
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Ankit Tyagi

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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Completed Technology Project (2016 - 2016)

Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.3 Aero Propulsion
    - TX01.3.2 Turbine Based Combined Cycle

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System